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Among the names in the second bibliography one finds those of BURGERSTEIN, CZAPEK, FRITSCH, HABERLANDT, KRASSER, LINSBAUER, MIKOSCH, MOLISCH, WETTSTEIN, ZAHLBRUCKNER, and others—certainly a notable list. It has been a pleasure to many American botanists to meet Professor WIESNER this summer and to join in the congratulations upon his past labors and extend to him our best wishes for the future.—C. R. B.

MINOR NOTICES.

FRITSCH has published an interesting contribution to the comparative morphology of the seedling of Gesneriaceae.¹⁰ The account is so largely a description of many forms that a satisfactory summary is difficult to give. The book is divided into two parts. In the first part twenty-six species, comprising fourteen genera, are treated, and the gross form, particularly in several species of the *Streptocarpus*, is described in considerable detail. In the second part the structure of the grown plants is considered, and the behavior of the cotyledons, leaf arrangement, anisophylly, and kindred topics presented by this group are discussed. A chapter is devoted to a short account of the anatomy of Gesneriaceae and one also to the structure of *Streptocarpus* as compared with other *Cyrtandroideae*.—W. B. MACCALLUM.

THE HORTICULTURAL SOCIETY of New York has published¹¹ the proceedings of the International Conference on plant-breeding and hybridization held in New York city, September 30 and October 1 and 2, 1902. The conference was such a notable one in the quality of the papers presented that it is a valuable service to biology in general to have them accessible. Not only are the presented papers published, but also the discussions and the papers read by title. Forty-two papers are thus brought together, most of them dealing with the fundamental principles of plant-breeding and hybridization, and they represent investigations and conclusions that botanists should become more familiar with.—J. M. C.

LINDAU¹² has published a pocket handbook for the collection and preparation of the lower cryptogams with special reference to conditions in the tropics. In this work of some 75 pages the characteristic habitats of mosses, liverworts, algae, and fungi are described; directions are given for the preparation of material in herbarium form and for the simpler methods of preserving in spirits or in formalin. It is a book which the traveler and collector with botanical interests will find very useful.—B. M. DAVIS.

¹⁰ FRITSCH, K., Die Keimpflanzen des Gesneriaceen, mit besonderer Berücksichtigung von *Streptocarpus*, nebst vergleichenden Studien über die Morphologie dieser Familie. 8vo. pp. iv+188. *figs.* 38. Jena: Gustav Fischer. 1904. *M*4.50.

¹¹ Proceedings International Conference on plant breeding and hybridization. 1902. Hort. Soc. N. Y. Memoirs, Vol. I. New York: Horticultural Society. 1904.

¹² LINDAU, G., Hilfsbuch für das Sammeln und Präparieren der niederen Kryptogamen mit besonderer Berücksichtigung der Verhältnisse in den Tropen. 12mo. pp. 78. Berlin: Gebrüder Borntraeger. 1904. *M*1.50.

THE TWENTIETH part of ENGLER'S *Das Pflanzenreich* is a presentation of the great tropical family Zingiberaceae by SCHUMANN.¹³ The usual critical discussion of the family from various standpoints is followed by a presentation of the 38 genera and 849 species. Four new genera (*Odontycheium*, *Gagnepainia*, *Aframomum*, *Monocostus*) and 141 new species are described.—J. M. C.

ROTH'S *Europäischen Laubmoose*¹⁴ progresses rapidly, the eighth part having been issued in July and the ninth in October. They contain the conclusion of the Acrocarpae and a good share of the Pleurocarpae. It would seem that two more parts might complete the work. The author would do well to devote a final part to keys to genera and species.—C. R. B.

THE SECOND fascicle of the third volume of HALÁCSY'S¹⁵ flora of Greece completes the work, including from Gramineae through the pteridophytes. With this last fascicle appear the general preface, the bibliography, an introduction describing the floristic regions, and a good index.—J. M. C.

NOTES FOR STUDENTS.

BESSEY¹⁶ has described the peculiar stomata of *Holacantha Emoryi*, a leafless shrub of the southwestern arid regions. The guard cells lie at the bottom of a narrow chimney-shaped cavity which extends above and below the epidermis, and consists of about eight vertical rows of cells.—J. M. C.

THE MORPHOLOGY and general histology of three Pacific coast algae are described in the last number of the Minnesota Botanical Studies:¹⁷ *Callymenia phyllophora* by CLARA K. LEAVITT; *Endocladia muricata* by FLORENCE M. WARNER; and *Laminaria bullata* by OLGA MUELLER.—B. M. DAVIS.

RUSSELL¹⁸ shows many photographic prints produced by contact or mere approximation of various woods with a sensitized plate in darkness. The amount of action varies greatly with different woods, exposures of thirty minutes to eighteen hours or more being required. The active agent seems to be H₂O₂, and probably the resin in the wood is the indirect cause.—C. R. B.

¹³ ENGLER, A., *Das Pflanzenreich*. Heft 20. Zingiberaceae von K. SCHUMANN. pp. 458. Leipzig: Wilhelm Engelmann. 1904. *M* 23.

¹⁴ ROTH, GEORG, *Die europäischen Laubmoose*. Lieferung 8, pp. 257-384. pls. 21-30. Lieferung 9, pp. 385-512. pls. 31-40. Leipzig: Wilhelm Engelmann. 1904. Each *M* 4. Not sold separately.

¹⁵ HALÁCSY, E. de, *Conspectus Florae Graecae*. Vol. III. fasc. 2. pp. 321-520. Leipzig: Wilhelm Engelmann. 1904. *M* 6.

¹⁶ BESSEY, CHARLES E., The chimney-shaped stomata of *Holacantha Emoryi*. Bull. Torr. Bot. Club 31:523-527. pl. 24. 1904.

¹⁷ Minnesota Botanical Studies 3:291-308. pls. 44-47. 1904.

¹⁸ RUSSELL, W. J., On the action of wood on a photographic plate in the dark. Phil. Trans. Roy. Soc. London B. 197:281-289. pls. 11-18. 1904.